



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

TDD (804) 698-4021

www.deq.virginia.gov


Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

MEMORANDUM

TO: State Water Control Board

FROM: Melanie D. Davenport, Director, Water Division 

DATE: July 6, 2011

SUBJECT: Consideration to Designate a Portion of the Dan River as a Public Water Supply

EXECUTIVE SUMMARY

Staff intends to recommend that the Board adopt amendments to the Water Quality Standards regulation to designate a 1.34 mile segment of the Dan River and its tributaries as a Public Water Supply (PWS).

BACKGROUND

At its June 22, 2010 meeting, the State Water Control Board directed staff to publish a Notice of Public Comment soliciting comment on an amendment to designate a 1.34 mile segment of the Dan River as a public water supply (PWS). The rulemaking is in response to a petition from the City of Roxboro, NC. A raw water intake intended to serve Roxboro and the North Carolina counties of Person and Caswell is proposed for the Dan River near the town of Milton, NC approximately 13 miles downriver from Danville, VA. North Carolina water quality standards require public water supply protections to extend 10 miles upriver from the intake. For approximately nine river miles above the intake, the Dan River flows through North Carolina. Virginia standards call for public water supply protections 5 miles upriver from the intake. Roxboro is requesting PWS protection in accordance with Virginia's water quality standards regulation for the 1.34 mile of the Dan River and sufficient length of its tributaries in Virginia to complete the ten mile run of the river as measured from the proposed intake. **Attachment 1** shows a map of the proposed segments in Virginia for PWS designation.

The intake was originally planned for 30 million gallons/day (MGD) but in 2002 the City of Danville, VA expressed concern to the NC Department of Environment and Natural Resources and Roxboro that 30 MGD was excessive. The proposed withdrawal was reduced to 10 MGD with the possibility of expanding to 22 MGD if or when the need arises.

The need for the proposed intake was prompted due to the City of Roxboro's concerns of extreme drought similar to that of 2002 and the Homeland Security Act which encourages localities to develop alternative water supply sources and inter-local connections for emergency use. The need for the intake considers the possibility that the proposed Dan River intake may be the sole source supply for the two counties and

their municipalities should existing wells or reservoirs be damaged or depleted. In addition, Roxboro indicates that existing water supply may be inadequate if one or more bulk water customers locate in either of the counties.

A Notice of Public Comment (NOPC) was published in the Virginia Register on February 14, 2011 and the comment period ended April 15, 2011. Comment was received from the City of Danville Utilities Department, Pittsylvania County, Roanoke River Basin Association, and from Mr. Wells Barker.

LOCALITY COMMENT

In general, opposing comment received from localities is directed towards the necessity of the proposed intake, potential additional restrictions for upstream wastewater treatment facility (WWTF) discharges, the proposed amount of water to be withdrawn, and the location of the water's return.

Comment received from Danville's Division of Water & Wastewater Treatment stated their continued opposition to the inter-basin transfer of water from the Dan River. The proposed intake is near Milton, NC. Danville comment states that the existing wastewater treatment facility discharge that would accommodate the removed water returns it to a tributary to the Dan River approximately 30 miles downriver. They maintain that inter-basin transfer of water will result in a significant loss of a natural resource to communities in the Dan River watershed. There are also concerns of future increases in the amount of withdrawal from 10 MGD to 30 MGD as it is their understanding the raw water line is designed to accommodate up to 30 MGD although the initial withdrawal amount requested in the permit application is less than 30 MGD. Another issue of concern is the possibility of degraded water quality during periods of extreme low flow in the river segment between the point of water removal and return. Should this happen they believe the City of Danville could be targeted to treat wastewater to a higher degree.

Pittsylvania County provided comment stating concerns that parallel those of Danville. They refer to their close regional partnership with Danville in the form of economic development projects and their contract with Danville for that city to provide water and waste water treatment services in the amount of 3 MGD.

The Roanoke River Basin Association stated that, based upon USGS data, the lesser 10 MGD withdrawal request represents almost 9% of the entire median stream flow in the area. They stated that volume of water is significant and may result in water depletion and have other adverse environmental and socio-economic impacts on the Roanoke River basin below the intake. The potential for inter-basin transfers of water that originate in the Dan River are a real concern for residents and communities within the basin. If the North Carolina localities that are to be receiving water from the proposed intake decide to sell that water to other localities that do not discharge back to the Roanoke basin or if it is decided the expense is too great to pump treated wastewater back to the Dan, there is a net loss risk of a valuable resource. They also state their concerns of more stringent discharge limits and potential increased cost to localities to meet those limits should discharge limits be recalculated with reduced low flow conditions due to the intake. They state their opposition to any inter-basin transfer of water and do not support any decision to designate the proposed portion of the Dan River as a public water supply.

CITIZEN COMMENT

Comment was received from Mr. Wells Barker of Beaufort, NC. He urges the Board to rethink the approval of Roxboro's petition for PWS reclassification of the Dan River. He believes what was presented to the State of Virginia was not a complete picture of this water project, its need, or the

intended use of the water involved and he feels it important that Virginia and citizens in the Roanoke basin be aware of inconsistencies regarding the stated need and probable use of water from the proposed intake at Milton, NC. He asserts that Roxboro and Person County initiated this water supply project approximately 10 years ago and have invested over \$750,000 in the process to date. The governing bodies of Roxboro, Person County, and Yanceyville (a town within Caswell County) met with the Caswell County Commissioners in an attempt to negotiate Caswell joining the other localities in the proposed water supply project. According to Mr. Barker, Caswell County agreed to sign on to the project after changes were incorporated into the project agreement that Caswell Co. believes would allow them a portion of the revenue generated by the sale of the Dan River water, should such sales occur.

Mr. Barker supplied a copy of Roxboro's 2008 Local Water Supply Plan on file with the N.C. Division of Water Management (NCDWM). He points out that by 2050 Roxboro projects to be using 52% of their supply from their two water source lakes. He continues that in 2050 Yanceyville's water plan projects that they will be using 20% of its supply and Milton's plan projects they will be using 27% of their supply. NCDWM recommends that localities with water supply systems should be investigating additional sources if they are projected to be using 80% of supply 20 years in the future. Mr. Barker is of the opinion the Milton water supply intake project is about the sale of water and not the need for it. He states that the most likely recipient of any water sales from the Dan River would be Durham County, NC which has experienced a 20% increase in population over the past 10 years. Durham Co. is in the Neuse River basin and the sale of water to Durham Co. would be an inter-basin transfer of water which will affect many municipalities, businesses, and citizens throughout the Roanoke River basin all the way to Virginia Beach.

STAFF RESPONSE

Staff recognizes the comments received address issues directly related to designating a portion of the Dan River and its tributaries in Virginia as a public water supply as well as issues not directly related to the designation. These other issues deal with how and where the water removed from the Dan River would be returned to the river within North Carolina and the impact that would have on uses of the river within the Commonwealth.

The City of Danville North Side Wastewater Treatment Facility (WWTF) discharge point (with a diffuser) to the Dan is a little over one tenth of a mile upstream of the terminus of the petitioned PWS segment. Low flow conditions are utilized at the point of discharge when permit limits are calculated. A downstream water withdrawal would not affect calculation of permit limits for Danville's discharge. Refer to **Attachment 2** indicating the location of the Danville WWTF in relation to the upper limit of the petitioned PWS segment.

Based on the use of a diffuser at the WWTF, the effluent should be well mixed and so there should not be a concern for any downstream withdrawal. General water quality problems due to low flow (drought) would affect the WWTF regardless of the downstream withdrawal. There is little chance that the withdrawal itself would result in stricter limits for the discharges upstream of the intake.

Other issues raised by the comments are in regard to how and where the water removed from the Dan River would be returned to the river within North Carolina. The withdrawal may be more likely to affect downstream dischargers because critical flows could be reduced for the Dan River below the intake which may be deducted from historical low flow conditions. This could reduce assimilative capacity at downstream discharge points. The closest significant discharger in VA downriver from the proposed intake is South Boston WWTF which is approximately 30 miles down river. DEQ permitting staff was consulted with regard to the potential impacts to permit limits for existing significant dischargers in the

South Boston area should 10 MGD be removed from the Dan River at Milton, NC. They responded that reduction of the total residual chlorine limits may be the only consequence experienced. According to the engineering consultant for the City of Roxboro, a portion of the intake water would be returned to the Dan River via the Yanceyville, NC WWTF discharge (permit No. NC004011; design flow 0.6 MGD) to County Line Creek which joins the Dan River just downriver of the proposed Milton intake and is approximately 25 miles upriver from the Town of South Boston. Another portion of the intake water would be discharged to Marlowe Creek by the Roxboro, NC WWTF discharge (permit No. NC0021024; design flow 5.0 MGD). This water is ultimately returned to the Dan River via the Hyco River approximately 10 miles downriver of South Boston. **Attachment 3** shows a map of water return locations in relation to the proposed intake.

DEQ staff understands the concerns of the Virginia communities expressing concern regarding the Roxboro water withdrawal but it is not germane to the public water supply designation. In the interest of maintaining the on-going interstate cooperation, a Memorandum of Agreement was signed by DEQ Director David Paylor and NC Department of Environment & Natural Resources (NCDENR) on June 6, 2011. The MOA is provided as **Attachment 4**. The MOA acknowledges a mutual agreement to reduce downstream impacts to water supplies and encourage reciprocation of designations in the future when feasible. The MOA identifies the segments of the Dan River and its tributaries that are proposed for PWS designation. The memo goes on to recognize that PWS protections according to the state of Virginia will be accorded to the designated segment though that does not guarantee the designation is protective of North Carolina water supply nor does it guarantee delivery of any particular quality of water for North Carolina water supply. In the event of a known, reportable contaminant discharge event in the segment that may result in significant impairment to waters in North Carolina, Virginia DEQ will make reasonable and expeditious effort to notify Roxboro.

As an interstate source of water supply, there are inevitably inherent tensions among the states and water users from each state regarding water allocation. Withholding approval or denying the Roxboro public water supply designation will have no impact on whether the withdrawal is ultimately allowed. The issue of equitability between the two states on water withdrawals has been the subject of ongoing dialogue among the legislative and citizen representatives of the Roanoke River Bi- State Commission for the last year and will continue. A joint water quantity model has been developed to inform the discussion. Should the basis for an interstate agreement be reached in this forum, review by DEQ, the Board, and the Administration would follow.

STAFF RECOMMENDATION

Staff recommends the Board approve adoption of the following amendment to the Water Quality Standards regulation at section 3 of 9VAC25-260-450 to designate these waters as a Public Water Supply:

SECTION DESCRIPTION

Dan River and its tributaries from the Virginia-North Carolina state line just south of Danville to points 1.34 miles upstream and the first unnamed tributary to Hogans Creek from the Virginia-North Carolina state line to a point 0.45 mile upstream.

Presenter Contact Information:

Alan Pollock, Manager, Office of Water Quality Programs

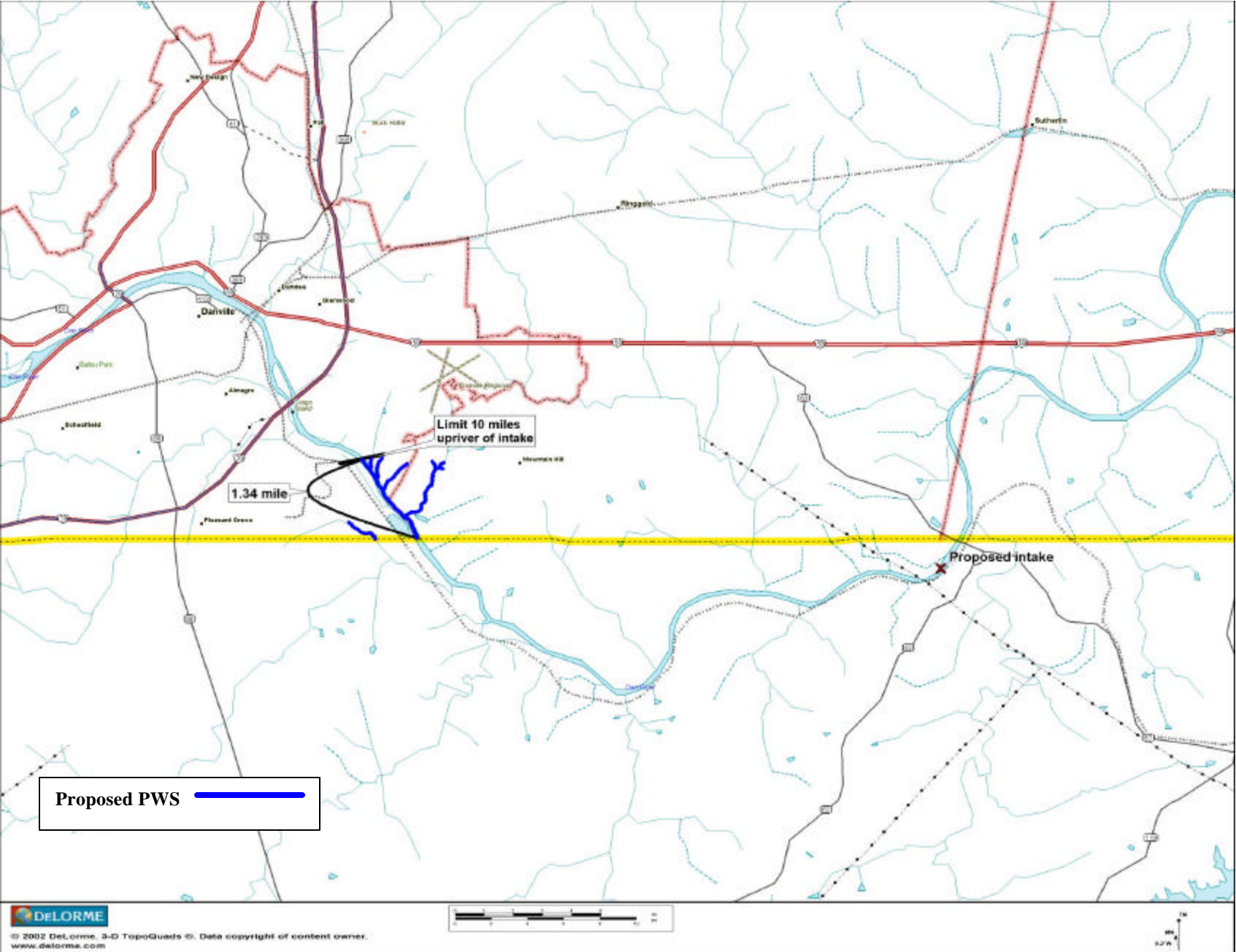
Phone: (804)698-4002

Email: Alan.Pollock@deq.virginia.gov

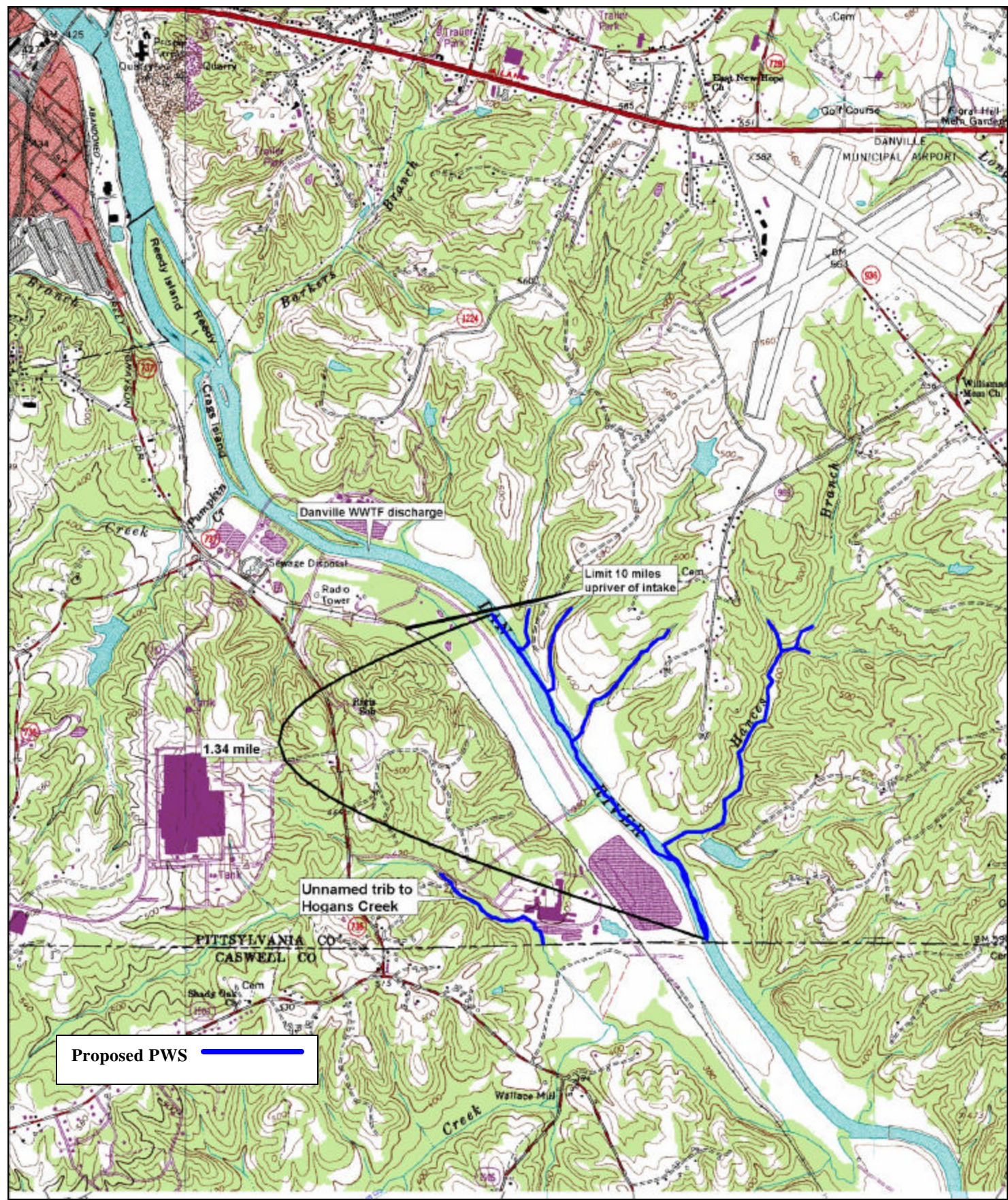
Attachments to this memo to aid in your review of these regulatory amendments are as follows:

- Attachment 1:** Map of the Dan River and tributary segments petitioned for PWS designation
- Attachment 2:** Map of Danville WWTF in relation to upper limit of petitioned PWS segment
- Attachment 3:** Map of water return locations
- Attachment 4.** Memorandum of Agreement

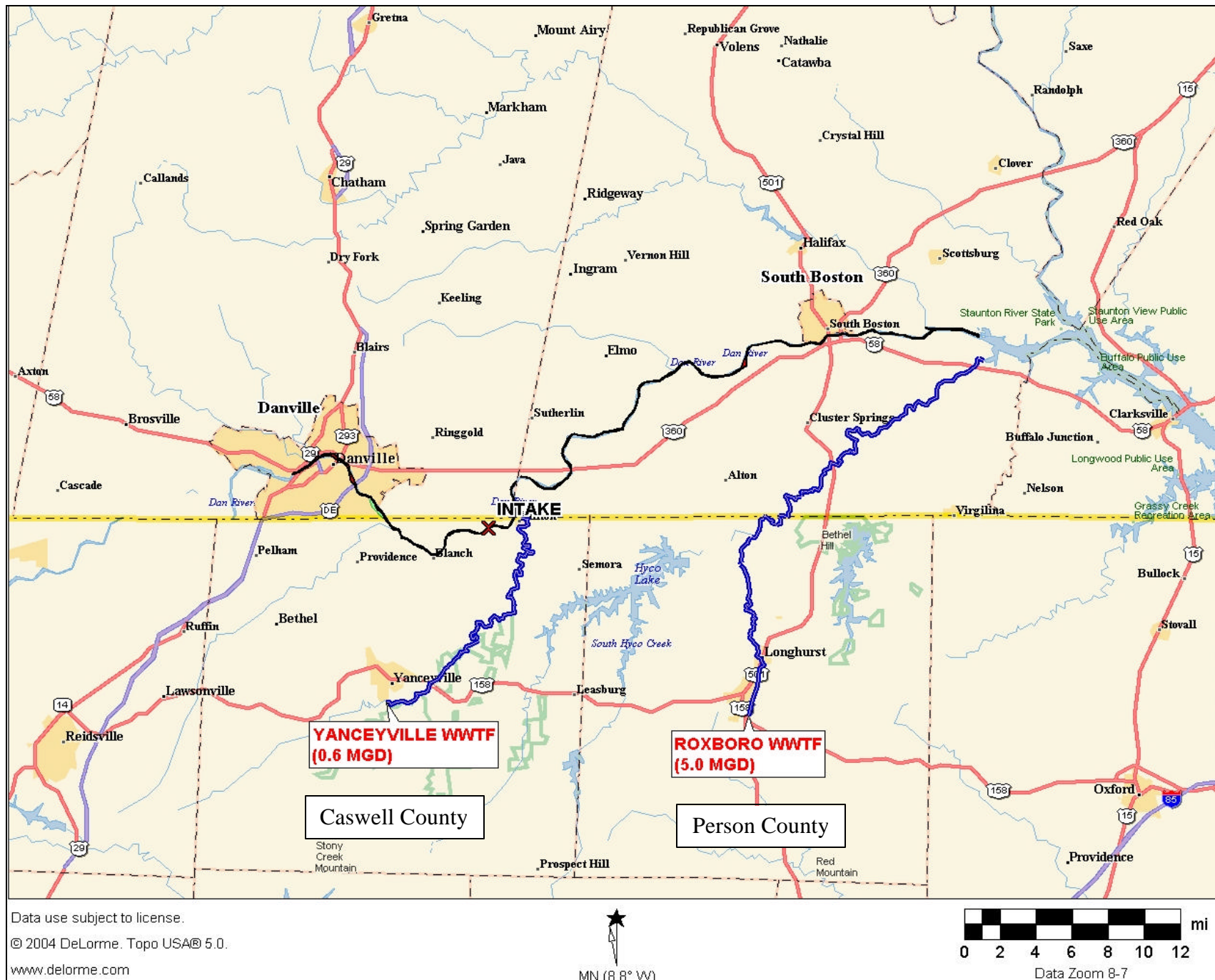
Attachment 1. Dan River and tributary segments in VA petitioned for PWS designation



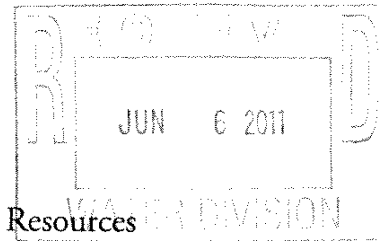
Attachment 2. Danville WWTF discharge in relation to upper limit of petitioned PWS segment



Attachment 3. Map of water return locations



Attachment 4. Memorandum of Agreement



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM OF AGREEMENT

DESIGNATION OF A PORTION OF THE VIRGINIA DAN RIVER AS A PUBLIC WATER SUPPLY

THIS MEMORANDUM OF AGREEMENT, is made and entered into this 23rd day of May, 2011 between the Virginia Department of Environmental Quality, acting by and through the Virginia State Water Control Board ("Virginia DEQ"); and the North Carolina Department of Environment and Natural Resources, through its Division of Water Quality ("North Carolina DENR") (collectively referred to herein as the "Parties").

WHEREAS, the City of Roxboro, North Carolina ("Roxboro") intends to withdraw raw surface water from the Dan River for water supply. The withdrawal from the Dan River is projected to serve Roxboro and the North Carolina Counties of Person and Caswell. The point of withdrawal is located in the jurisdiction of North Carolina, approximately 13 miles downstream from Danville, Virginia; and

WHEREAS, North Carolina water quality standards require that water bodies designated for water supply meet certain criteria that are protective of the water supply. Such water protection standards extend 10 miles upstream from the point of withdrawal. Virginia standards require that water supply protection extend 5 miles upstream from the point of withdrawal; and

WHEREAS, the Dan River extends for approximately 9 miles upstream from the point of withdrawal near the town of Milton, North Carolina until the River reaches the jurisdictional boundary of Virginia. In order to comply with North Carolina water supply standards, and to establish a point of withdrawal, the City of Roxboro has petitioned the Virginia State Water Control Board to designate approximately a 1.34 mile segment of the Dan River upstream of the jurisdictional boundary as a water supply (Exhibit 1). The 1.34 mile segment would be established consistent with Virginia water supply standards; and

WHEREAS, the designation of the identified segment of the Dan River as a water supply is in the best interest of, and benefits the welfare of, the public of North Carolina; and

WHEREAS, the Parties administer the water quality protection programs for their respective jurisdictions; and

WHEREAS, in the spirit of mutual benefit and cooperation, Virginia DEQ and North Carolina DENR desire to accommodate one another through mutual agreement to reduce the downstream impacts to water supply and to encourage reciprocation of designations in the future when feasible.

NOW, THEREFORE, the Parties hereto mutually agree as follows:

1. SEGMENT IDENTIFICATION. The segment of the Dan River subject to this Agreement ("the Segment") is that segment beginning at the Virginia/North Carolina border in Pittsylvania County, Virginia and Caswell County, North Carolina, to a point 1.34 miles north and upstream, and inclusive of the major branches and tributaries within the described 1.34 mile segment of the main channel of the Dan River. Such identification is described herein as Exhibits 2 through 4.

2. SEGMENT DESIGNATION. Virginia DEQ will propose that the Segment be designated a water supply receiving protection under Virginia water quality standards upon the execution of this Agreement by both parties. Adoption of that proposal will require proper public notification in compliance with 9 VAC 25-11-60, adoption by regulation of the Segment identification by the Virginia State Water Control Board pursuant to its authority at VA CODE ANN. § 62.1-44.15, and approval by the U.S. Environmental Protection Agency, if required.

3. WATER QUALITY. The action of designating the described segment is a legal designation that may provide certain statutory and regulatory protections under Virginia law. Virginia DEQ does not warrant that such designation will afford such protections or that such designation is protective of North Carolina water supply. Further, such designation does not warrant that the designated waters meet or comply with Virginia or North Carolina water quality standards for any purpose. Virginia DEQ does not warrant enforcement of a particular water quality standard or delivery of any particular quality of water for North Carolina water supply.

4. NOTICE OF DISCHARGE. In the event of a known, reportable contaminant discharge event in the designated segment that may result in significant impairment to waters in North Carolina, Virginia DEQ shall make reasonable and expeditious effort to notify the City of Roxboro of such discharge.

The Virginia Department of Environmental Quality Office providing such notices shall be:

- The Blue Ridge Regional Office - Lynchburg, Tel: (434) 582-5120;
- Mike Cholko, Pollution Response Program Coordinator, cell: (434) 942-6450;
- Fred DiLella, Pollution Response Program Manager, cell: (434) 238-0042.

The City of Roxboro office receiving such notices shall be:

- During business hours: Mr. Tommy Warren, Assistant City Manager, Tel: (336) 503-0489.
- During non-business hours: Mr. Sammy Yarborough, Operator Responsible Charge, Tel: (336) 599-4906.

5. RECIPROCATION. Virginia DEQ and North Carolina DENR agree that the identification of certain segments of shared water features as water supply may contribute to the protection of water quality and inure to the mutual benefit of both states. In the event Virginia DEQ or North Carolina DENR desires other water supply designations, the parties agree to take actions necessary for their respective jurisdictions to consider such designations and approve of such designations when feasible and reasonably practicable. The terms of such designations shall be substantially similar to the terms described in this Agreement.

6. TERMINATION. Either party may terminate the Agreement, without cause, by giving written notice to the other party at least 30 days in advance of such termination.

7. EFFECTIVE DATE and TERM. This Agreement shall take effect immediately upon execution of this Agreement by both parties. This Agreement will remain in effect unless terminated, modified, amended or replaced in writing by the parties. This Agreement may be executed in one or more counterparts. Unless terminated earlier, this Agreement shall remain in force for a period of five years from the effective date.

8. MERGER and AMENDMENT. This Agreement replaces and supersedes any and all previous agreements on the same subject matter. This Agreement may be amended at any time upon the agreement by both parties to such amendment.

9. NOTICE. Any communication between the parties hereto or notices to be given hereunder shall be given in writing by personal delivery, facsimile or mailing the same, postage prepaid, to the addresses or numbers set forth below on the signature pages or as subsequently modified in writing by the party to be noticed.

10. NOT A CONTRACT. This Agreement is a statement of the intentions of North Carolina DENR and Virginia DEQ to exercise their authorities in a cooperative manner to the benefit of the citizens of both states. This is not a contract or interstate compact. It is not enforceable in any judicial or administrative forum and it does not create any third party beneficiary.

11. ENTIRE AGREEMENT. This Agreement and its Exhibits constitute the entire agreement of the parties and supersedes all prior communications, understandings and agreements relating to the subject matter herein, whether oral or written.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement.

Signed this 6th day of June, 2011

FOR THE VIRGINIA STATE WATER CONTROL BOARD AND THE VIRGINIA DEPARTMENT
OF ENVIRONMENTAL QUALITY

By: _____

David K. Paylor, Director

Signed this 23rd day of May, 2011

FOR THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL
RESOURCES

By: _____

Dee Freeman, Secretary